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EXAMINER	
HAILE, AWET A	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,999	WARRILLOW ET AL.	
	Examiner	Art Unit	
	AWET HAILE	2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *40-43* is/are allowed.

6)☐ Claim(s) *22-39 and 44* is/are rejected.

7)☒ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 June 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 22-44** are pending on this application.

Claims 1-21 are cancelled.

Response to Argument

2. Applicant's arguments with respect to **clams 22- 39 and 44** have been considered but are moot in view of the new ground(s) of rejection.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d), which papers have been placed on record file.

Objection to Drawings

4. The drawings are objected to under 37 CFR 1.84(o) because **Figs.1 and 11 lacks descriptive legend in the drawings as described in the specification**. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended.

The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the

replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Specification

5. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code, on **page 24 lines 30-31.**

Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

6. The substitute specification filed on **07/23/2009** has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because: **Applicant failed to provide a statement stating; that the substitute specification contains no new matter**.

A substitute specification must not contain new matter. The substitute specification must be submitted with markings showing all the changes relative to the immediate prior version of the specification of record. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. **An accompanying clean version (without markings) and a statement that the substitute specification contains no new matter must also be supplied**. Numbering the paragraphs of the specification of record is not considered a change that must be shown.

Claim Rejections – 35 USC§ 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. **Claims 22-36, 39 and 44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cecile (European Patent Application EP 1220557A1) in view of Johansson et al (US 2004/0219912 A1).

Regarding claim 22, Cecile '557 discloses, a method for managing resources in a communication system having resources shared by at least two operators(see paragraphs 60-61 and Fig. 6, i.e., operators A, B and C sharing, access shared spectrum 602 which is managed by common controller 606), comprising :

receiving an access request for a first operator of the at least two operators (see paragraphs 61, 65, and Figs. 6, 8, i.e., common controller 606 receiving shared spectrum access request from operator B); executing a first determination whether there are sufficient amount of free resources available in the communication system (see paragraph 72 and Fig. 8, step 814, i.e., determining whether a call can be accepted by a proprietary system by comparing the call impact with a threshold);

executing a second determination whether a total amount of said resources shared by at least two operators in use in the communication system exceeds a first threshold (see paragraphs 44-46, 74-75 and Fig. 8, step 842-846, i.e., determining whether available bandwidth on shared spectrum is enough to accept a demand); and deciding on accepting the access request based on the results of the first (see paragraph 72 and Fig. 8, step 814, i.e., determining whether a call can be accepted by a proprietary system by comparing the call impact with a threshold), second determinations(see paragraphs 44-46, 74-75 and Fig. 8, step 842-846, i.e., determining whether available bandwidth on shared spectrum is enough to accept a demand); furthermore, Cecile '557 teaches, using a third threshold associated with an operator to determine shared spectrum access for an access requesting operator(see paragraphs 39-40, 42-44 and Figs. 2-4, 8).

Cecile '557 is silent on, executing a third determination whether a total amount of said resources shared by at least two operators in use for the first operator exceeds a second threshold, deciding on accepting the access request based on the results of the third determinations.

Johansson '912 teaches, executing a third determination whether a total amount of said resources shared by at least two operators in use for the first operator exceeds a second threshold (see paragraphs 35-37 and Fig.3, i.e., comparing operators use of shared resources with a predetermined load threshold) deciding on accepting the access request based on the results of the third determinations(see paragraphs 35-37 and Fig.3, i.e., allowing an operator to a shares resources access based on the comparison).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of determining whether an operators exceeds its shared resources threshold and deciding on accepting an access request based on the result as taught by Johansson '912, into the communication system of Cecile '557, in order to provide means fro exchanging usage information in the multi-operator mobile network, as suggested by Johansson '912(see abstract).

Regarding claim 23, Cecile '557 discloses, a method wherein the step of executing the second determination is performed only if the first determination shows that there are sufficient free resources available in the communication system (see paragraphs 44-46, 74-75 and Fig. 8, step 842-846, i.e., determining whether available bandwidth on shared spectrum is enough and if enough bandwidth exist determining whether additional spectrum can be given to accept more calls).

Regarding claim 24, Cecile '557 discloses, wherein the access request is accepted if the second determination shows that the total amount of resources in use in the communication system does not exceed the first threshold(see paragraphs 43-44, 74-75, i.e., allowing new calls if the amount of shared resources is not exceeding a predetermined threshold).

Regarding claim 25, Cecile '557 discloses, the act of size discrimination based on the capacity requested by the incoming connection dependent on the total amount of resources in use in the communication system if the second determination shows that the total amount of

resources in use in the communication system does not exceed the first threshold (see paragraphs 77-81, i.e., allowing access to the shared spectrum according to size of requests).

Regarding claim 26, Cecile '557 discloses, determination of a threshold class dependent on the total amount of resources in use in the communication system (see paragraphs 39, 42-43 and figs. 2-4, dynamic thresholds based on available resources);

comparing an amount of resources required by the access request with a maximum accepted size associated with the determined threshold class(see paragraphs 52-55 and Fig.5, i.e. comparing new call service request with the admission proprietary threshold); accepting the access request if the amount of resources required by the access request is smaller than or equal to the maximum accepted size(see paragraphs 52-55 and fig. 5, i.e. accepting the requested service if the service request is less than the threshold); and rejecting the access request if the amount of resources required by the access request is larger than the maximum accepted size(see paragraphs 52-55 and Fig. 5, i.e., rejecting the requested service if it's greater than the threshold).

Regarding claim 27, Cecile '557 discloses, wherein the act of executing the third determination is performed only if the second determination shows that the total amount of resources in use in the communication system exceeds the first threshold (see paragraphs 52-54 and Fig. 5, i.e., accepting/rejecting access requests based on two thresholds).

Regarding claim 28, Cecile '557 discloses, wherein the access request is accepted if the third determination shows that the total amount of resources in use for the first operator does not exceed the second threshold (see parag71-74 and Figs. 5, 8,i.e., accepting the access request if the amount of resource available doesn't exceed a second threshold).

Regarding claim 29, Cecile '557 discloses, wherein the first threshold is equal to a pre-determined congestion threshold (see Fig. 8, i.e., step 814 a predetermined operator proprietary threshold).

Regarding claim 30, Cecile '557 discloses, wherein the first threshold is equal to a pre-determined congestion threshold minus the amount of resources required by the access request (see paragraphs 42-44 and Figs. 2-4, i.e., predetermined operator proprietary threshold between admission threshold and depart or drop thresholds).

Regarding claim 31, Cecile '557 is silent on, wherein the second threshold is equal to a pre-determined portion of the total resources allocated to the first operator.

Johansson '912 teaches, wherein the second threshold is equal to a pre-determined portion of the total resources allocated to the first operator threshold (see paragraphs 35-37 and Fig.3, i.e., comparing operator's use of shared resources with a predetermined load threshold).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of determining whether an operators exceeds its shared resources threshold and deciding on accepting an access request based on the result as taught by Johansson '912, into the communication system of Cecile '557, in order to provide means fro exchanging usage information in the multi-operator mobile network, as suggested by Johansson '912(see abstract).

Regarding claim 32, Cecile '557 discloses, wherein the second threshold is equal to a pre-determined portion of the total resources allocated to the first operator minus the amount of resources required by the access request (see paragraphs 42-44 and Figs. 2-4, i.e., predetermined depart threshold between the operator proprietary threshold and drop thresholds).

Regarding claim 33, Cecile '557 discloses, further comprising the act of storing a respective measure of the fraction of resources currently in use by each of said at least two operators(see paragraphs 51-52, i.e., the common controller 606 storing shared spectrum use of operators A , B and C in order to determine new call acceptance), said measure for the first operator being updated upon accepting the access request or when an already established connection for the first operator is terminated(see paragraphs 52-54, i.e., updating operators use of the shared spectrum).

Regarding claim 34, Cecile '557 silent on, updating the respective measures by means of resource utilisation information from an external source.

Johansson '912 teaches, updating the respective measures by means of resource utilisation information from an external source (see paragraphs 29-31 and Figs. 2-3, i.e., using the eIur(-g) interface to update usage shared resources).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of determining whether an operators exceeds its shared resources threshold and deciding on accepting an access request based information received via the interface as taught by Johansson '912, into the communication system of Cecile '557, in order to provide means fro exchanging usage information in the multi-operator mobile network, as suggested by Johansson '912(see abstract).

Regarding claim 35, Cecile '557 discloses, wherein the access request is rejected if the first determination shows that there are not sufficient free resources available in the communication system **or** if the third determination shows that the total amount of resources in use for the first operator exceeds the second threshold (see paragraph 72 and Fig. 8, step 814, i.e., determining whether a call can be accepted by a proprietary system by comparing the call impact with a threshold).

Regarding claim 36, Cecile '557 discloses, evaluating a priority of the access request if the first determination shows that there are not sufficient free resources available in the communication system or if the third determination shows that the total amount of resources in use for the first operator exceeds the second threshold (see paragraphs 76-81 and Fig.9, i.e., if

access to the shared spectrum by the operators exceeds the threshold using a priority level to allow access to the shares spectrum).

Regarding claim 39, Cecile '557 discloses, wherein the act of receiving an access request for the first operator in turn receiving a renegotiation request for an ongoing call from the first operator(see paragraphs 64 65 and Fig.7, i.e., common controller 702 and local controller 704 communicating access request and grant information);

providing a supplementary access request for the first operator having an access request size corresponding to the difference between a requested size and a present size of the ongoing call, if the requested size is larger than the present size (see paragraphs 69-72, i.e., local controller B reducing the access request); and performing a change of resource utilisation for the ongoing call, if the present size is larger than the requested size (see paragraphs 70-73 and Figs. 7-8, i.e., common controller 702 changing resource allocation based on available resources).

Regarding claim 44, Cecile '557 discloses, wherein the acts of executing the first determination, executing the second determination, executing the third determination, and deciding on accepting the access request are performed by a node of the communication system (see paragraphs 64-67, 70-73 and Figs. 7-8, i.e., common controller 702 receiving access requests and determining whether to accept or reject by computing access requests with multiple thresholds).

10. **Claim 37 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cecile '557 and Johansson '912 as applied to claims above, and further in view of Witana (US 6922564 B2).

Regarding claim 37, Cecile '557 discloses, wherein the act of evaluating the priority comprises of: executing a fourth determination whether the sum of the free resources available in the communication system and a total amount of resources being occupied by traffic having a lower priority than the priority of the access request for the first operator is smaller than the amount of resources required for the access request for the first operator (see paragraphs 77-81 and Fig. 9, i.e., the central controller adjusting threshold values based on priority of access requests); rejecting the access request if the fourth determination shows that the sum of the free resources available in the communication system and the total amount of resources being occupied by traffic having a lower priority than the priority of the access request for the first operator is smaller than the amount of resources required for the access request for the first operator(see paragraphs 76-80 and Figs. 8-9, i.e., central controller denying access to an operator based on priority related to the requesting operator);

Cecile '557 and Johansson '912 are silent on, and pre-empting on-going traffic sufficient to allow the access request for the first operator if the fourth determination shows that the sum of the free resources available in the communication system and the total amount of resources being occupied by traffic having a lower priority than the priority of the access request for the first

operator is equal to or larger than the amount of resources required for the access request for the first operator, and accepting the access request.

Witana '564 teaches, pre-empting on-going traffic sufficient to allow the access request for the first operator if the fourth determination shows that the sum of the free resources available in the communication system (see column 4 lines 42-56, column 5 lines 1-50 and Figs.4-5) and the total amount of resources being occupied by traffic having a lower priority than the priority of the access request for the first operator is equal to or larger than the amount of resources required for the access request for the first operator, and accepting the access request (see column 4 lines 42-56, column 5 lines 1-50 and Figs.4-5, accepting an access request from a mobile terminal by comparing bandwidth requested by a terminal with available bandwidth).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate, the method of accepting an access request based by comparing bandwidth requirement fro the access request with available bandwidth as taught by Witana '564, into the communication system of Cecile '557, in order to determine a maximum capacity of a network based on the number of transmitting nodes in the network, as suggested by Witana '564(see abstract).

Regarding claim 38, Cecile '557 discloses, determining which operator of the at least two operators presently being in most excess of its target resource utilisation (see paragraphs 79-

81 and Fig. 6-9, i.e., the central controller 606 calculating shared access use of operators); selecting a connection of the operator of the at least two operators presently being in most excess of its target resource utilisation having a lower priority than the priority of the access request for the first operator(see paragraphs 79-81 and Fig. 6-9, i.e., central controller 606 determining priority levels of operators A, B and C);

releasing the selected connection; determining whether the resources required for the access request is larger than the free resources available in the communication system(see paragraphs 79-81 and Fig. 6-9, i.e., dropping connections for the lowest priority); and repeating the previous acts if the resources required for the access request is larger than the free resources available in the communication system(see paragraphs 79-81 and Fig. 6-9, i.e., dropping connections for the lowest priority if no free shared resources are not available).

Allowable Subject Matter

11. **Claims 40-43** are allowed.

The following is an examiner's statement of reasons for allowance: The prior art record, considered individually or in combination, appears to fail to fairly show or suggest a claimed invention comprising, among other limitations, novel and unobvious limitations of;

means for executing a first determination whether there are sufficient amount of free resources available in the communication system;

means for executing a second determination whether a total amount of said resources shared by at least two operators in use in the communication system exceeds a first threshold;

means for executing a third determination whether a total amount of said resources shared by at least two operators in use for the first operator exceeds a second threshold; and

means for deciding on accepting the access request based on the results of the first, second and third determinations.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, Uddenfeldt (US 5805633 A), Kuchibhotla et al (US 2005/0075129 A1), Cave (US 2005/0124353 A1) are recited to show shared resources management.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AWET HAILE whose telephone number is (571)270-3114. The examiner can normally be reached on Monday through Friday 8:30 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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